REMARKS

The Examiner is thanked for allowing claims 1, 3, 5-9, 11, and 31 in the Notice of Allowance issued on July 3, 2006.

Claims 1, 3, 5-9, 11, 31, and 32-41 are pending in the instant application. No claims presently stand rejected. Claims 32-41 are newly presented. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

New Claims

To expedite prosecution of the new claims, Applicants will briefly comment on US Patent No. 5,889,913 to Tohyama et al. Tohyama was the primary reference relied upon by the Examiner in the Office Action issued on February 9, 2006, prior to issuing the Notice of Allowance.

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

Tohyama fails to disclose or teach the elements of new independent claim 32 for two independent reasons.

First, independent claim 32 recites, "defining a void in a sacrificial layer proximate to an active layer with a first etching substance reactive with the sacrificial layer..." Tohyama fails to disclose or teach defining a void in a sacrificial layer **with an etching substance**.

To be sure, the Examiner references the structure of FIG. 18C in Tohyama and cites spacer layer 52 as corresponding to the claimed sacrificial layer and further cites the missing portion of spacer layer 52 over mesa strip 11 as corresponding to defining a void in the spacer layer 52. However, the following portions of Tohyama disclose that the missing portion of spacer layer 52 over mesa strip 11 is NOT defined using an etching substance, but rather is selectively grown using SiO2 film 51 as a selective growth inhibiting mask to form the missing section.

An InGaAsP spacer layer 52 is formed below the p-type InP cladding layer 4

> **in a region <u>except</u> a mesa stripe 12**. (*Tohyama*, col. 12, lines 59-61; Emphasis added)
>
> ...and subsequently an InGaAsP spacer layer 52 is **selectively grown on the two sides of the SiO_2 film 51**. (*Tohyama*, col. 13, lines 7-9; Emphasis added)
>
> In this embodiment, the SiO_2 film 51 is used as a common mask when the mesa stripe 11 is formed by etching and **the InGaAsP spacer layer 52 is selectively grown**. (*Tohyama*, col. 13, lines 21-23; Emphasis added)

Accordingly, these portions of Tohyama clearly recite that SiO_2 film 51 is formed on substrate 1 and used to define mesa strip 11. Then, spacer layer 52 is selectively grown on either side of film 51, using film 51 as a selective growth inhibiting mask. Nowhere does Tohyama disclose or teach defining a void in spacer layer 52 with an etching substance that is reactive with spacer layer 52.

Second, independent claim 32 recites, "defining a ridge section in the overgrowth layer with a second etching substance reactive with the overgrowth layer and substantially non-reactive with the sacrificial layer..." Tohyama also fails to disclose defining a ridge section in the overgrowth layer with a second etching substance reactive with the overgrowth layer.

To be sure, the Examiner refers to the structure illustrated in FIG. 18D of Tohyama and cites p-type InP cladding layer 4 as corresponding to the claimed ridge section and the overgrowth layer. However, Tohyama does not disclose that the ridge section of cladding layer 4 is defined by etching using an etching substance. Rather, Tohyama discloses,

> As shown in FIG. 18D, a p-type InP cladding layer 4 and a p-type InGaAs contact layer 5 are **selectively grown** by MOCVD by **using the SiO_2 film 53 as a selective growth inhibiting mask**. (*Tohyama*, col. 13, lines 13-16; Emphasis added)

Accordingly, Tohyama discloses growing cladding layer 4 on mesa strip 11 and using SiO_2 films 53 (see FIG. 18C) to selectively inhibit the growth of cladding layer 4 to thereby shape the ridge section of cladding layer 4. Tohyama does not disclose defining the ridge section in cladding layer 4 using "a second etching substance reactive with the overgrowth layer and substantially non-reactive with the sacrificial layer..."

Consequently, Tohyama fails to disclose each and every element of claim 32, as required under M.P.E.P. § 2131. Accordingly, Applicants request that new independent claim 32 and its dependents be allowed.

CONCLUSION

In view of the foregoing remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative at (206) 292-8600 if the Examiner believes that an interview might be useful for any reason.

CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

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